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NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

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Adopt Env-Wm 1401 to read as follows:**PART Env-Wm 1401 UNDERGROUND STORAGE FACILITIES**

Statutory Authority: RSA 146-C:9 and RSA 146-A:11-c

Env-Wm 1401.01 Purpose. The purpose of these rules is to set forth the requirements for underground storage facilities under RSA 146-C to prevent and minimize contamination of the land and waters of the state due to the storage and handling of motor fuels, heating oils, lubricating oils, other petroleum and petroleum contaminated liquids, and hazardous substances, by establishing criteria for registration and permitting, and standards for design, installation, operation, maintenance, and monitoring of such facilities.

Env-Wm 1401.02 Applicability. These rules shall apply to all underground storage facilities having a total storage capacity of more than 110 gallons which are used for the storage of regulated substances, or of unknown size with the following exclusions:

- (a) Underground storage facilities which are used solely for residential heating use;
- (b) Underground storage facilities having no tank with a storage capacity of more than 1,100 gallons and which are used solely for the storage of heating oil for on-premises use;
- (c) Systems where less than 10% of the total volume of the tank(s) and associated piping is below the surface of the ground;
- (d) Any system which is located in an underground room or vault if the system is totally above or upon the surface of the floor, and no portion of any tank is covered, surrounded, or buried with soil or stone or other material, and all system components can be visually inspected;
- (e) Emergency spill or overflow containment systems that are immediately emptied after introduction of a regulated substance;
- (f) Equipment or machinery that contains regulated substances for operational purposes such as hydraulic lift tanks and electrical equipment tanks;
- (g) Oil-transmission pipelines subject to the Natural Gas Pipeline Safety Act of 1968 or the Hazardous Liquid Pipeline Safety Act of 1979;
- (h) Wastewater treatment facilities including oil/water separators regulated by the Clean Water Act Section 402 or 307(b), and oil/water separators at oil and gas production facilities;
- (i) Septic tank systems or floor drain collection tank systems that collect waste for the purpose of segregating such waste from septic systems;
- (j) Flow-through process systems which form an integral part of a production process

through which there is a steady, variable, recurring, or intermittent flow of materials during the operation of the process. Flow-through process systems shall not include tanks used for the storage of materials prior to their introduction into the production process or for the storage of finished products or by-products from the production process;

(k) Facilities containing radioactive material regulated under the Atomic Energy Act of 1954; and

(l) Underground storage facilities which store products containing concentrations of regulated substances which are less than the allowable drinking water standard for the regulated substances.

Env-Wm 1401.03 Definitions.

(a) "Cathodic protection tester" means an individual who is certified by NACE International or the International Fire Code Institute as having qualification in the measurements of cathodic protection of buried metal piping systems and tanks.

(b) "Certified tank installers" means an individual who is certified by the International Fire Code Institute in underground storage tank installation/retrofitting and certified as a qualified installer by the manufacturer as being qualified in the installation of a tank or individual system components.

(c) "Certified tank remover" means an individual who is certified by the International Fire Code Institute in underground storage tank system decommissioning and has a knowledge of national underground storage tank regulations and industry standards.

(d) "Community water system" means "community water system" as defined by RSA 485:1-a, I, namely, "a public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents."

(e) "Compatible" means the ability of 2 or more substances to maintain their respective physical and chemical properties upon contact with one another for the design life of the tank system under conditions likely to be encountered in the underground storage system.

(f) "Connected piping" means all piping, including valves, elbows, joints, flanges, and flexible connectors, attached to a tank or system through which regulated substances flow.

(g) "Corrosion expert" means an individual who is either certified by NACE International or who is a registered professional engineer with education and experience in corrosion control of buried metal piping systems and tanks.

(h) "Division" means the division of waste management of the department of environmental services.

(i) "Excavation zone" means the volume containing the tank system and backfill material bounded by the ground surface, walls, and floor of the pit and trenches into which the underground storage tank system is placed at the time of installation.

(j) "Facility" means "facility" as defined in RSA 146-C:1, namely, "means an assemblage of tanks, pipes, pumps, vaults, fixed containers, and appurtenant structures, singly or in any combination, which are used or designed to be used for the storage, transmission, or dispensing of oil or a hazardous substance, and which are within the size, capacity, and other specifications prescribed by rules adopted by the department pursuant to RSA 146-C:9, VI."

(k) "Free product" means a regulated substance that is present as a non-aqueous phase liquid on groundwater, or surface water, or in soil or bedrock.

(l) "Heating oil" means petroleum as follows:

- (1) No. 1;
- (2) No. 2;
- (3) No. 4-light;
- (4) No. 4-heavy;
- (5) No. 5-light;
- (6) No. 5-heavy;
- (7) No. 6-technical grades of fuel oil;
- (8) Other residual fuel oils;
- (9) Navy Special Fuel Oil;
- (10) Bunker C; and
- (11) Other fuels, excluding waste oil, when used as substitutes for any of these fuel oils.

(m) "Impressed current system" means a system which prevents corrosion to a metal tank surface by making the metal surface the cathode of an electrochemical cell, using a power source called a rectifier connected to buried metal anodes which are connected to the tank surface by a wire.

(n) "Large community or non-transient non-community water supply well" means a well which produces equal to or greater than 57,000 gallons daily for a community or non-transient, non-community water system.

(o) "Leak monitoring" means the detection of a regulated substance before a release to the environment has occurred.

(p) "Lining" means a coating of a non-corrosive material bonded to the interior surface of a tank.

(q) "Marina" means a commercial waterfront facility whose principal use is the provision of publicly available services such as the securing, launching, storing, fueling, servicing and repairing of watercraft.

(r) "Monthly" means once every calendar month.

(s) "Motor fuel" means petroleum or a petroleum-based substance that is motor gasoline, aviation gasoline, jet fuel, No. 1 or No. 2 diesel fuel, or any grade of gasohol, and which typically is used in the operation of a motor engine.

(t) "New underground storage tank site" means a parcel of land where no underground storage tank systems have existed and on which the installation of a system is proposed.

(u) "Non-transient non-community water system" means "non-transient non-community water system" as defined by RSA 485:1-a, XI, namely, "a system which is not a community water system and which serves the same 25 people, or more, over 6 months per year."

(v) "Oil" means "oil" as defined in RSA 146-A:2,III, namely, "petroleum products and their by-products including, but not limited to, petroleum, fuel, sludge, crude and all other liquid hydrocarbons regardless of specific gravity. Notwithstanding the above, the term "oil" does not include natural gas, liquefied petroleum gas or synthetic natural gas regardless of derivation or source."

(w) "Operating day" means a 24-hour period in which any product has been put into or removed from the tank.

(x) "Owner" means "owner" as defined in RSA 146-C:1, XIV, namely, "the person in possession of or having legal ownership of a facility. In addition, for facilities no longer in use "owner" includes the person having had legal ownership of such facility immediately prior to discontinuance of its use.

(y) "Pipe" means an impermeable hollow cylinder or tubular conduit that conveys or transports oil or liquid, or that is used for venting, filling, or removal of oil or liquids.

(z) "Reconcile" means to compare the volume of stored regulated substance at the beginning of an inventory period with receipts, sales, and other uses during the inventory period, and with volume stored at the end of the inventory period, to determine whether there is any unaccounted gain or loss of regulated substance.

(aa) "Regulated substance" means oil or a hazardous substance.

(ab) "Release detection" means determining whether a release of a regulated substance has occurred.

(ac) "Repair(s)" means to fix or replace an integral unit of piping of less than 25 feet or any existing defective or damaged part of an underground storage tank system to meet the requirements of Env-Wm 1401.

(ad) “Sacrificial Anode” means a system used which prevents corrosion to a metal tank surface by making the metal surface the cathode of an electrochemical cell, using zinc or magnesium anodes buried in the ground close to the metal surface which are connected to the tank surface by a wire.

(ae) “Secondary containment” means a containment system such as a double-wall tank or a single-wall tank with a concrete vault which prevents regulated substance that has discharged or leaked from the primary containment system from impacting the land and waters of the state.

(af) “Small community or non-transient, non-community water supply well” means a well which produces less than 57,000 gallons per day for a community or non-transient, non-community water system.

(ag) “Substantial modification” means “substantial modification” as defined in RSA 146-C:1, XVI, namely, “the construction or installation of any addition to a facility or any restoration or renovation of a facility which: increases or decreases the on-site storage capacity of the facility; significantly alters the physical configuration of the facility; or impairs or improves the physical integrity of the facility or its monitoring systems. On-site abandonment is specifically excluded as a “substantial modification” of a facility.”

(ah) “Surface waters of the state” means “surface waters of the state” as defined by RSA 485-A:2, XIV, namely, “streams, lakes, ponds and tidal waters within the jurisdiction of the state, including all streams, lakes or ponds bordering on the state, marshes, water courses and other bodies of water, natural or artificial.”

(ai) "System" means an underground storage tank(s) and all connected piping, pumps, containment structures, monitors, or other equipment serving the tank(s).

(aj) "Tank" means a stationary device constructed of impermeable materials and designed to contain or hold regulated substances, which is a component of an underground storage system.

(ak) “Underground storage tank facility” means “underground storage tank facility” as defined in RSA 146-C:1,XVIII, namely, “means a facility or facility component that is 10 percent or more below the surface of ground and is not fully visible for inspection.”

(al) “Waste oil” means an oil which, through use or handling, has become unsuitable for its original purpose due to the presence of impurities or loss of original properties, but which still has sufficient liquid content to be free flowing.

Env-Wm 1401.04 Registration.

(a) Pursuant to RSA 146-C:3, the owner of an underground storage facility shall register the facility by providing the information required by RSA 146-C:3, I and II.

(b) Owners shall submit in writing to the division any change in facility status such as ownership and equipment within 10 days of the change.

(c) If facility ownership is disputed, the owner of the property on which the facility is located shall register the facility, shall be deemed to be the facility owner, and shall provide the information required by Env-Wm 1401.06.

(d) For new systems or substantial modifications of existing systems, a new or amended registration form, respectively, shall be filed with the division at the time of final inspection of the system.

(e) No person shall operate an underground storage facility which is not registered with the division.

Env-Wm 1401.05 Change in Use. The owner of any facility which would become subject to regulation under Env-Wm 1401 due to a change in the use of any system at the facility shall register the facility at least 30 days prior to changing the use of the system and shall comply with all applicable requirements before instituting the changed use.

Env-Wm 1401.06 Information Required for Registration.

(a) In addition to the information required by RSA-146-C:3, the following shall be submitted to register each underground storage facility:

- (1) The type of owner, such as federal government, state government, local government, commercial, or private;
- (2) The type of facility, such as gas station, petroleum distributor, air taxi, aircraft owner, auto dealership, railroad, local government, state government, federal non-military, federal-military, commercial, industrial, contractor, trucking/transportation, utilities, farm or residential, or other;
- (3) The number of tanks permanently closed, and the date of such closure for each tank;
- (4) The number of tanks temporarily closed, and the date of such closure for each tank;
- (5) Change in ownership;
- (6) The certification of compliance as specified in (b), below; and
- (7) Proof of financial responsibility as specified in Env-Wm 1401.10.

(b) The owner shall agree to and sign the following: "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete."

(c) The information required in (a) and (b), above shall be submitted on a form obtained

from the division.

Env-Wm 1401.07 Permit to Operate.

(a) As specified in RSA 146-C:4, I, no person shall operate an underground storage facility without a permit issued by the division.

(b) The owner of an underground storage facility shall apply to the division for a permit to operate by providing the following:

(1) All information required for registration, specified in Env-Wm 1401.06;

(2) The permit fee required by RSA 146-C:4; and

(3) A certification of compliance, signed by the owner, which states that the facility is in compliance with all applicable statutory and regulatory requirements.

(c) A permit issued under this section shall be displayed in such a way as to be permanently affixed on the facility premises and visible to a division inspector.

(d) The permit to operate shall be valid for a period of 5 years.

(e) The permit to operate shall apply to all underground storage systems at the facility.

(f) If the division determines that a facility is not in compliance with applicable statutory and regulatory requirements, the division shall issue a notice of non-compliance and permit revocation to the owner, which includes:

(1) A listing of compliance deficiencies;

(2) A requirement for achieving compliance within 90 days of receipt of the notice; and

(3) The date of permit revocation upon failure of the owner to achieve compliance or request an opportunity for hearing.

(g) At least 60 days prior to the permit expiration date, the owner shall apply for permit renewal by providing the information required by Env-Wm 1401.07(b).

(h) When a permit renewal application is received, the division shall determine the compliance status of the facility with respect to Env-Wm 1401. The division shall also determine the compliance status of any Env-Ws 410.19, .22, .23, .26 and .27 corrective action requirements, and any Env-Ws 412 regulated substance release response requirements. The division shall not issue a renewal permit if the facility is not in compliance with all the requirements of Env-Ws 410.19, .22, .23, .26 and .27, Env-Wm 1401, and Env-Ws 412. If the division has not determined the compliance status of the facility by the permit expiration date, and if the owner has applied to the division in accordance with the above, a renewal permit shall be issued.

(i) If a permit renewal application is not received by the division, the operator shall cease operating the facility no later than the permit expiration date, and the owner shall close all systems at the facility under Env-Wm 1401.17 or Env-Wm 1401.18.

Env-Wm 1401.08 Transfer of Facility Ownership.

(a) When a transfer of ownership of any underground storage tank facility takes place, the new owner shall file an amended registration form with the division within 10 days of the transfer.

(b) The seller shall deliver to the buyer all documents and information related to the facility regarding:

- (1) Inventory;
- (2) New installations;
- (3) Testing;
- (4) Closure or removals;
- (5) Lining;
- (6) Monitoring;
- (7) Sampling and analysis;
- (8) Site assessments;
- (9) Equipment maintenance;
- (10) Repairs;
- (11) Compliance history;
- (12) Financial responsibility; and
- (13) Any other records required to be maintained by these rules.

Env-Wm 1401.09 Revocation of Permit to Operate.

(a) If the division determines that a facility is not in compliance with applicable statutory and regulatory requirements, the division shall issue a notice of non-compliance and permit revocation to the owner, which includes:

- (1) A listing of compliance deficiencies;

(2) A requirement for achieving compliance within 90 days of receipt of the notice; and

(3) The date of permit revocation upon failure of the owner to achieve compliance or request an opportunity for hearing.

(b) A facility owner may appeal a notice of non-compliance and permit revocation to the Waste Management Council in accordance with RSA 21-O:14, and Env-WMC 203.

Env-Wm 1401.10 Financial Responsibility.

(a) Owners of underground storage facilities for oil shall maintain financial responsibility for costs associated with the cleanup of releases from systems, the implementation of corrective measures, and compensation for third party damages in the amount equal to or greater than \$1,000,000 per occurrence.

(b) The amount of financial responsibility required shall not limit an owner's or operator's liability for damages caused by a release.

(c) The requirement for financial responsibility may be satisfied if the owner of a facility is eligible for reimbursement of costs associated with cleanup of releases from systems, under RSA 146-D.

Env-Wm 1401.11 Inventory Monitoring.

(a) The owner of an underground storage facility shall conduct inventory monitoring of each underground storage tank, and shall maintain separate records for each tank and interconnected system.

(b) Fuel oil systems containing Bunker C, no. 4, no. 5, or no. 6 fuel oil shall be exempt from inventory control.

(c) An owner shall begin inventory monitoring and perform system tightness testing in accordance with Env-Wm 1401.13 for any underground storage tank system for which inventory monitoring has not been performed in accordance with Env-Wm 1401.11, or for which records have not been maintained in accordance with these rules.

(d) Owners of motor fuel, bulk storage fuel oil or hazardous substance systems without secondary containment and leak monitoring for both tank and piping shall perform the following:

(1) The owner shall reconcile inventory data daily and monthly;

(2) Measure the liquid stored using:

a. A gauge stick which shall be capable of measuring the level of liquid in the tank to the nearest 1/8 inch; or

- b. Using an automatic tank gauging device of equivalent or better measuring accuracy.
- (3) Notify the division within 24 hours if any of the following occurs:
 - a. The water in the tank changes by 2 inches or more over one month or any shorter period;
 - b. Any tank contains a total water depth of 3 inches or more; or
 - c. The monthly reconciled inventory records show an unexplained gain or loss of regulated substance greater than 1.0 percent of the pump meter reading plus 130 gallons;
- (4) Maintain all records relating to inventory monitoring, including sales receipts for a period of 3 years; and
- (5) Perform a tightness test, pursuant to Env-Wm 1401.13, on any system with an unexplained gain or loss of regulated substance greater than 1.0 percent of the pump meter reading plus 130 gallons, or with a change in water level of 2 inches or more in any one month, or total water depth of 3 inches or more.
- (e) Inventory records for motor fuel, bulk storage fuel oil or hazardous substance systems without secondary containment and leak monitoring for both tank and piping shall include the following:
 - (1) Facility registration number;
 - (2) Tank number and volume;
 - (3) The type of substance being stored;
 - (4) Tank contents in gallons before and after each delivery;
 - (5) All bulk liquid delivery receipts;
 - (6) Total liquid gallons of sales or uses for each operating day;
 - (7) Measurement in gallons of liquid stored for each operating day;
 - (8) Monthly measurement in inches of water level;
 - (9) Daily loss or gain of product in gallons for each operating day;
 - (10) Total monthly gallons of loss or gain of product;
 - (11) Total monthly liquid gallons of sales or use;

(12) Monthly maximum gain or loss in product allowed by the division before notification is required; and

(13) Owner signature certifying the accuracy of the monthly inventory records.

(f) Owners of on-premise-use heating oil systems that are not exempt under Env-Wm 1401.02(b) or emergency generator systems without secondary containment and leak monitoring for both tank and piping shall perform inventory control by annual tank gauging in accordance with the following requirements:

(1) The tank shall be filled to the maximum level allowed by the overfill prevention device;

(2) Tank oil and bottom water level measurements shall be recorded at the beginning and end of an idle period of at least 30 days, during which no oil shall be added to or removed from the tank;

(3) All measurements shall be based on an average of 2 consecutive readings;

(4) The measurement equipment used shall be capable of measuring the level of oil over the full range of the tank's height to the nearest 1/8 of an inch;

(5) If the results of the annual tank gauging indicate a change in water level of 2 inches or more, or a loss or gain of oil, the owner shall notify the division within 24 hours;

(6) Records of oil and water measurement data shall be maintained for a period of 3 years;

(7) A tightness test shall be performed, pursuant to Env-Wm 1401.13, on any system with an unexplained gain or loss of oil, or a total water depth of 3 or more inches; and

(8) Release detection methods as specified in Env-Wm 1401.29 and Env-Wm 1401.30 may be substituted for annual tank gauging as required by this section.

(g) Records for when inventory control is by annual tank gauging for on-premise-use heating oil systems or emergency generator systems without secondary containment and leak monitoring for both tank and piping shall include the following:

(1) Facility registration number;

(2) Tank number and volume;

(3) The type of substance being stored;

(4) Measurement in inches of water and product with the date taken; and

(5) Owner signature certifying the accuracy of the annual tank gauging records.

(h) Owners of waste oil systems without secondary containment and leak monitoring for both tank and piping shall perform inventory control by monthly tank gauging in accordance with the following requirements:

(1) Tank oil and water level measurements shall be recorded at the beginning and end of an idle period of at least 36 hours, during which no oil shall be added to or removed from the tank;

(2) All measurements shall be based on an average of at least 2 consecutive readings;

(3) The measurement equipment used shall be capable of measuring the level of oil over the full range of the tank's height to the nearest 1/8 of an inch;

(4) If the results of the monthly tank gauging indicate a change in water level, or a loss or gain of oil, the owner shall notify the division within 24 hours;

(5) Records of oil and water measurement data shall be maintained for a period of 3 years;

(6) A tightness test shall be performed, pursuant to Env-Wm 1401.13, on any system with an unexplained gain or loss of oil, or an unexplained change in water level; and

(7) Release detection methods as specified in Env-Wm 1401.29 and Env-Wm 1401.30 may be substituted for monthly tank gauging as required by this section.

(i) Inventory records for waste oil systems without secondary containment and leak monitoring for both tank and piping shall include the following:

(1) Facility registration number;

(2) Tank number and volume;

(3) The type of substance being stored;

(4) Measurement in inches of water and product with the date and time taken; and

(5) Owner's signature certifying the accuracy of the monthly tank gauging records.

Env-Wm 1401.12 Regulated Substance Transfers.

(a) The facility owner shall not allow transfer of regulated substances to be made to any facility which is not registered or which does not have a permit to operate.

(b) Immediately prior to transferring any regulated substance into a tank, the owner shall determine that the tank has sufficient receiving capacity to hold the volume to be transferred.

(c) No transfer shall be made to a tank which is not equipped with spill and overfill protection devices, as required by Env-Wm 1401.25.

Env-Wm 1401.13 Tightness Testing.

(a) All underground storage systems without secondary containment and leak monitoring shall be tightness tested in accordance with (c) through (j), below if the system was not tightness tested since November 9, 1989.

(b) Underground storage systems for which inventory monitoring in accordance with Env-Wm 1401.11 has not been performed or for which inventory records required by these rules have not been maintained, the owner shall tightness test the system in accordance with (c) through (j), below.

(c) The tank tightness testing protocol or method shall be tested and certified by an independent testing laboratory and shall be certified by the laboratory to meet the leak rate detection criteria of (g), below. A complete description of the method or protocol and a copy of the certification shall be filed with the owner. The owner shall retain the description and certification for the life of the facility.

(d) When a tightness test is performed, the owner shall send a tightness test report to the division no later than 30 days after the date of the test.

(e) The tightness test report shall include:

- (1) The facility and tank registration number;
- (2) System location;
- (3) The name, address and telephone number of the system owner;
- (4) Tank capacity;
- (5) The age of the tank;
- (6) Product stored;
- (7) Location of each system tested;
- (8) A copy of field each of the technician's testing records;
- (9) Any other information to accurately identify each system;
- (10) A statement specifying that the piping was also tested;

- (11) A description of any piping, fittings, or connections that were tightened or repaired;
 - (12) The length of any waiting periods after product delivery, topping, or vapor space disturbances;
 - (13) A description of the temperature measurement equipment and method used for the tightness test;
 - (14) A description of the releveled procedure used;
 - (15) The date of last calibration and maintenance of tightness testing equipment;
 - (16) Test duration time; and
 - (17) A description of the vapor pocket measurement and elimination procedure used.
- (f) The technician performing the test shall sign a test report which certifies:
- (1) The validity, method, and accuracy of the test;
 - (2) That the test complies with requirements of these rules; and
 - (3) That he or she is qualified to perform the test.
- (g) The tightness test shall be capable of detecting a system leak rate of 0.10 gallon per hour with a probability of detection of 0.95 and a probability of false alarm of 0.05, accounting for all variables including vapor pockets, thermal expansion of product, temperature stratification, evaporation, pressure, end deflection, water table, and tidal action.
- (h) A leak or failure shall be indicated by a test result of 0.10 gallon per hour or greater or an inconclusive test result.
- (i) The test report and other documents describing the type of test, contractor, date, materials, all technician testing data and any other information pertinent to the work performed under this section shall be kept by the owner for the life of the system.
- (j) If information submitted to the division causes the division to question the accuracy of the test, the person conducting tank tightness tests shall provide the division with information on all testing equipment and protocols which have the potential to affect the accuracy of the test within 10 days of the division requesting the information.

Env-Wm 1401.14 Certification of Technicians Performing Tightness Tests.

- (a) Any person conducting tank tightness tests shall have an understanding of the variables which affect the test, be trained in the performance of the test, and be certified as qualified by the

manufacturer of the equipment used in the testing protocol or method. The technician shall register with the division by submitting a manufacturer's training certificate.

(b) Any person conducting tank tightness tests shall keep current the manufacturer's certification and registration with the division and shall notify the division of any change in employment status.

(c) No person shall conduct a tank tightness test to fulfill the requirements of these rules who is not certified and registered under (a) and (b), above.

Env-Wm 1401.15 Tightness Test Failures.

(a) The person conducting the tightness test shall notify the division and the facility owner and operator immediately of a system tightness test failure, as defined in Env-Wm 1401.13(h).

(b) The owner of an underground storage system shall report any failure to the division within 24 hours of receiving notice of the failure;

(c) A tightness test failure shall be addressed as follows:

(1) The owner shall perform an investigation into the cause of the failure to determine if the system is leaking;

(2) The investigation into the cause of an initial test failure shall be completed within 7 days;

(3) The investigation into the cause of an initial test failure shall include the performance of a second confirming tank tightness test; and

(4) The owner shall submit a written report to the division within 30 days of the failure which describes the work performed, the repairs made, and any other actions taken in response to the test failure.

(d) Any system which has been repaired shall be retested for tightness to confirm the effectiveness of the repairs.

(e) The owner may temporarily close the system within 7 days of the initial failure and permanently close the system in accordance with Env-Wm 1401.18 within 30 days of the original test failure instead of conducting an investigation in accordance with (c) (2), (3) and (d), above into the cause of the failure.

(f) Any underground storage system which fails the second confirming test for tightness shall be completely emptied of regulated substance within 24 hours of the second failure and permanently closed, in accordance with Env-Wm 1401.18 within 30 days.

Env-Wm 1401.16 Unusual Operating Conditions.

(a) The owner shall report any unusual system operating conditions to the division within 24 hours, unless the cause is immediately determined and corrected, and the owner determines that the unusual operating condition did not result in a release of a regulated substance.

(b) Unusual system operating conditions which shall require reporting shall include:

(1) Erratic behavior of dispensing equipment;

(2) An increase of 2 inches or more of water in a tank over any 30 day or shorter period or a total water depth of 3 inches or more;

(3) An indication by a leak monitor of a possible leak; and

(4) The presence near the facility of petroleum vapors or vapors of a hazardous substance.

(c) The owner shall initiate an investigation into the cause of any unusual system operating conditions within 24 hours of the occurrence of the condition and shall submit a written report within 7 days to the division delineating the investigation and its conclusions.

(d) If unusual operating conditions occur as in (b), above, the owner shall conduct a tightness test of the affected system(s) within 7 days of being notified by the division that the test is required.

Env-Wm 1401.17 Temporary Closure.

(a) Temporary closure of underground storage systems shall be accomplished by removing all substances from the tank so that no more than one inch of residue remains in the system. All substances removed shall be handled and disposed of in accordance with applicable local, state, and federal rules.

(b) Within 30 days of temporary closure, the owner shall notify the division in writing that the requirements of this section for temporary closure of the system have been met.

(c) A single wall underground storage system without secondary containment and leak monitoring which has been temporarily closed for more than 12 months shall be permanently closed within 30 days in accordance with Env-Wm 1401.18.

(d) A single wall underground storage tank system without secondary containment and leak monitoring, which has been temporarily closed for less than 12 months, may be placed back into service once the system has complied with Env-Wm 1401.04, Env-Wm 1401.07, Env-Wm 1401.10, Env-Wm 1401.25, Env-Wm 1401.29, Env-Wm 1401.30, Env-Wm 1401.32, and Env-1401.33.

(e) A double wall underground storage tank with secondary containment and leak monitoring, which has been temporarily closed for more than 90 days, shall not be placed back into service nor shall a regulated substance be introduced into the system until the owner complies with and certifies to the division that the system is in compliance with Env-Wm 1401.04, Env-Wm 1401.07,

Env-Wm 1401.10, Env-Wm 1401.25, Env-Wm 1401.26, Env-Wm 1401.27, Env-Wm 1401.32, and Env-Wm 1401.33.

(f) Systems with cathodic protection that are temporarily closed shall comply with Env-Wm 1401.32 (c) and Env-Wm 1401.33.

Env-Wm 1401.18 Permanent Closure.

(a) Registered steel underground storage systems without corrosion protection shall be permanently closed on or before 25 years after the date of installation. When the date of installation is unknown, the system shall have been permanently closed by October 1, 1995.

(b) All existing single wall underground storage tank systems without secondary containment and leak monitoring shall be permanently closed by December 22, 2015.

(c) When a tank system which is subject to Env-Wm 1401 is discovered, the owner shall register the facility in accordance with Env-Wm 1401.04 and within 30 days from registration, close the tank system in accordance with Env-Ws 1401.18.

(d) The owner shall notify the division at least 30 days prior to any scheduled system closure.

(e) Any person permanently closing a system shall be certified in underground storage tank decommissioning by the International Fire Code Institute (IFCI) within 6 months of the effective date of these rules. The certified tank remover shall also comply with safety and testing requirements such as API 1604, API 1631, and API 2015.

(f) Permanent closure shall be accomplished as follows:

(1) All product, liquid and sludge shall be removed from the system(s) and disposed of in accordance with applicable state and federal rules;

(2) After all substances have been removed from the system(s) all piping shall be disconnected and removed to the greatest extent possible or permanently capped or plugged;

(3) The system shall be tested for hazardous or explosive vapors and rendered vapor free or inerted of such vapors;

(4) The system shall be removed;

(5) If removal of an underground storage tank system would serve to undermine the integrity of an overlying structure(s), or compromise the structural integrity of an adjacent underground storage tank, then the underground storage tank may be permanently closed in place;

(6) A tank that is closed in place shall be filled to capacity, including all voids

within each tank, with a solid inert material;

(7) An assessment shall be performed to determine if any contamination is present using one of the following sampling methods:

- a. Test pits shall be excavated in the immediate vicinity of the system, and representative soil and, when encountered, groundwater samples shall be obtained;
- b. Soil and, when encountered, groundwater samples shall be obtained from the excavation resulting from the removal of the system;
- c. Existing release detection devices or subsurface monitoring locations shall be sampled;
- d. For tanks which will be closed in-place, soil and, when encountered, groundwater samples shall be obtained at representative locations from beneath the tank and around all system piping; or
- e. Soil and groundwater samples shall also be taken at locations adjacent to the system piping;

(8) The excavation where the tanks were located shall be screened for the presence of contamination, and samples shall be collected and shall be submitted to a New Hampshire certified laboratory for analysis, as follows:

- a. Field screening of samples shall include visual and olfactory observation and headspace analysis performed with equipment such as a portable organic vapor meter (OVM) or portable gas chromatograph (GC); and
- b. Laboratory analysis of samples shall include tests for constituents of those substances stored in the system; and

(9) A closure report containing results performed under (7) and (8), above and the laboratory analysis of samples performed under (8), above shall be submitted to the division within 30 days of the samples being taken.

(g) If soil or groundwater contamination from a regulated substance is detected by observation or analysis during closure of an underground storage system, any responsible party or other person shall immediately notify the division in accordance with RSA 146-A:5, II.

(h) The excavation shall not be backfilled, nor shall the closed tank be removed from the site until the division has inspected the site. If the division is unable to inspect the site within 7 days, the division shall grant permission for a consultant or other person knowledgeable in site assessments for contamination to inspect the site. When such permission is granted, the person inspecting the site shall submit a report to the division. The report shall contain a detailed account of inspection of soil and groundwater in the vicinity of the tank and piping, and of an inspection of the closed tank for

evidence of corrosion and leakage, and be submitted within 30 days of such inspection.

(i) Underground storage systems which have not been permanently closed shall be subject to all requirements of Env-Wm 1401.

(j) Documents pertaining to the closure of the tank or system, including contractor's invoices, manifests for disposal of materials, testing and analytical reports, and any other documents generated from the closure shall be kept by the owner for 3 years. These documents shall be transferred to the new owner at the time of a transfer of facility ownership.

Env-Wm 1401.19 Prohibition Against Reusing Tanks.

(a) As specified in RSA 146-C:8:

(1) Underground storage tanks which have been removed that do not meet the standards for new tanks shall not be reused as underground storage tanks for regulated substances.

(2) A tank once used for regulated substances shall not be reused to store food products or potable water.

(b) All double-wall tanks which have been removed shall be recertified by the tank manufacturer and shall comply with Env-Wm 1401.21 regarding tank standards for new underground storage systems prior to reuse as underground storage tanks for regulated substances.

Env-Wm 1401.20 Requirements for Approval of Underground Storage Systems.

(a) At least 90 days prior to commencing construction or installation of a new or replacement underground storage system, or a substantial modification of an underground storage system, the owner shall submit plans and specifications as required by RSA 146-C:7, I with the fee required by RSA 146-C:7, I-a to the division. The plans shall be prepared and stamped by a registered professional engineer, licensed to practice in the state of New Hampshire.

(b) Within 90 days of submission of plans and specifications, the division shall approve plans which demonstrate compliance with the requirements of these rules, or issue a notice of incompleteness or disapproval for plans which do not demonstrate compliance with these rules.

(c) As specified in RSA 146-C:7, II, an owner shall not cause or allow a change which is not in accordance with the approved plans and all terms and conditions of the division's approval.

(d) An approval granted for construction or installation of a corrosion prevention system, or a new or replacement underground storage system, or a substantial modification of an underground storage system shall be valid for one year from the date of issuance. If construction of the installation is not completed within one year, the approval shall be void.

(e) An approval to line a tank in accordance with Env-Wm 1401.36 shall be valid for 6 months from the date of issuance. If construction of the liner is not completed within 6 months, the

approval shall be void.

Env-Wm 1401.21 Tank Standards for New Underground Storage Systems.

(a) Pursuant to 40 CFR 280.20(a)(1), all glass-fiber-reinforced plastic underground storage tanks designed for storing regulated substances shall be manufactured in accordance with:

- (1) Standards of Underwriters Laboratories, Inc., UL 1316; or
- (2) Underwriters Laboratories of Canada, CANA-S615-M83.

(b) All double-wall steel underground storage tanks designed for storing regulated substances shall be manufactured with outer jackets of a minimum of 10 gauge in thickness or in accordance with Underwriters Laboratories Standard UL 58.

(c) All composite underground storage tanks designed for storing regulated substances shall be manufactured in accordance with Underwriters Laboratories Standard 1746, or the Association for Composite Tanks ACT-100.

(d) All underground storage tanks designed for storing regulated substances and constructed of steel shall be manufactured in accordance with one of the following standards:

- (1) Underwriters Laboratories of Canada, Inc. Standard ULC-603, Standard for Protected Steel Underground Tanks for Flammable and Combustible Liquids;
- (2) Underwriters Laboratories, Inc., USA, UL 58, Standard for Steel Underground Tanks for Flammable and Combustible Liquids; or
- (3) Code for Unfired Pressure Vessels; Section VIII, Division I, of the ASME Boiler and Pressure Vessel Code.

(e) All jacketed underground storage tanks designed for storing regulated substances shall be manufactured in accordance with Underwriters Laboratories Standard UL 1746 Part III or Underwriters Laboratories of Canada ULC-S 603.1.

(f) All tanks shall be provided with secondary containment which shall enclose 360 degrees of the inner tank.

(g) A concrete vault shall be used for secondary containment of a single wall tank designed for storing regulated substances only if the tank was manufactured in accordance with Underwriter Laboratories Standard UL 58 or Env-Wm 1401.21(a) standards.

(h) The secondary containment wall or envelope shall not be in contact with the inner wall such that a leak of the inner tank would not be detected due to restriction of product flow to the monitoring sump.

(i) No alterations of any kind shall be made to the tank without the tank manufacturer's

written approval.

(j) All new tanks shall have a wear plate constructed of steel or glass fiber reinforced plastic installed under each tank opening covering an area of at least 144 square inches for purposes of protecting the tank wall from abrasion or puncture.

(k) New underground storage tanks shall bear a stencil, label or plate which provides the following information:

- (1) The standard of design by which the tank was manufactured;
- (2) The year in which the tank was manufactured;
- (3) The dimensions and capacity of the tank; and
- (4) The name of the manufacturer.

(l) A certificate which shows all of the information required by (k), above and which also shows the date of installation and the regulated substances and percentages by volume of any additives which may be stored permanently and compatibly within, shall be displayed in such a way as to be visible to a division inspector and permanently affixed on the facility premises.

(m) Documents or copies of documents describing manufacturer's warranties, equipment items, contractor, equipment maintenance, repairs or testing, and all other information pertinent to the tank installation and system components shall be kept at the facility for the life of the system(s). These records shall be transferred to the new owner at the time of a transfer of facility ownership.

(n) The regulated substance stored shall be compatible with the interior lining or wall of the tank and all components, gaskets, and sealants that will be in contact with the stored substance. If the regulated substance stored is changed to a regulated substance that is not listed by the manufacturer as a substance that is compatible with the tank, a written confirmation from the manufacturer shall be obtained certifying the compatibility of the liquid with the system, prior to the change.

Env-Wm 1401.22 Piping Standards for New Underground Storage Systems

(a) All new underground pipes, fittings, and connections shall be constructed of fiberglass-reinforced epoxy, thermo-plastic material extrusions, black iron, stainless steel, or copper.

(b) Fiberglass-reinforced epoxy piping shall meet ASTM Specification D-2996-71, Standard Specification for Filament Wound RTRP, Underwriters Laboratory Subject 971 Standard for Non-Metallic Underground Piping or Underwriters Laboratories of Canada Guide ULC-107, "Glass Fiber Reinforced Plastic Pipe Fittings for Flammable Liquids." Ultimate sheer strength of adhesive and curing agent shall be in compliance with ASTM D-2517-66T, as approved and supplied by manufacturer.

(c) Thermoplastic extrusion flexible piping shall meet Underwriters Laboratories Standard

for Non-Metallic Underground Piping for Flammable Liquids, Subject 971.

- (d) Steel or iron primary product piping shall be Schedule 40 or heavier.
- (e) Except when cathodic protection is provided by impressed current, underground metal piping systems shall have di-electric bushings installed to electrically isolate the piping system from the tank and the dispenser, or other end-use point, and at any change in the metal type, such as at flexible connectors.
- (f) Piping systems shall provide flexibility for movement at the tank end, dispenser end, and at piping direction changes to relieve stress.
- (g) When metal pipe is totally isolated from water and/or soil or other backfill material via non-metallic secondary containment, cathodic protection of the piping shall not be required.
- (h) All new underground piping systems shall be designed, constructed, and installed with access and isolation points to permit independent pressure testing of the tank and piping without the need for excavation.
- (i) Pressure and temperature limitations shall meet ANSI B31, American National Standard Code for Pressure Piping or the manufacturer's requirements and recommendations.
- (j) The piping system and all components, gaskets, sealants that will be in contact with the stored substance shall be compatible with the stored substance.

Env-Wm 1401.23 Secondary Containment for New Tanks.

- (a) Secondary containment shall be provided for all new tanks.
- (b) A double-wall tank that meets applicable requirements of Env-Wm 1401.21 shall satisfy the requirements of this section for tank secondary containment.
- (c) A concrete vault used for secondary containment of a single wall tank as specified in Env-Wm 1401.21(g) shall:
 - (1) Be watertight and impervious to leakage of regulated substances;
 - (2) Be able to withstand chemical deterioration and structural stresses from internal and external causes;
 - (3) Be a continuous structure;
 - (4) Have no drain connections or other entries or openings through the vault, except as provided in (8), below;
 - (5) Be constructed of continuously poured reinforced concrete with chemical resistant water stops at any construction joint;

(6) Have reinforced top slab(s);

(7) Be sealed on the inside with a material compatible with the stored product, or otherwise designed to make the vault impervious to leakage of the stored liquid or intrusion of groundwater;

(8) Have only top openings, solely for tank entry manholes, piping, or for monitoring and pumping of liquid from the vault; and

(9) Be sealed around all penetrations or otherwise designed to prevent intrusion of precipitation or surface runoff.

(d) If a concrete vault is used for secondary containment, the tank shall be encased or bedded in the vault in accordance with the manufacturer's requirements.

(e) All secondary containment access ports shall be clearly marked or labeled and shall be secured against unauthorized access and tampering.

Env-Wm 1401.24 Secondary Containment for New Piping.

(a) All new underground storage piping which routinely contains regulated substances shall have secondary containment by utilizing double-wall piping or a piping trench liner system.

(b) Piping systems shall continuously slope to direct any leakage from the primary piping to a liquid-tight collection sump with sump sensor. A collection sump shall be physically located at each tank.

(c) A liquid-tight dispenser sump shall be installed directly beneath each dispenser to contain discharges.

(d) Piping trench liner systems for single wall piping shall include monitoring sumps installed in accordance with the manufacturer's requirements.

(e) The submersible pump head of all new pressurized piping systems shall be surrounded by a containment sump.

(f) All remote fill pipes shall comply with (a), (b) and (c), above, Env-Wm 1401.25 and Env- Wm 1401.27 (a) and (d). Vertical fill pipes shall comply with Env-Wm 1401.25(c).

(g) Piping systems installed for the purpose of siphoning regulated substances shall be equipped with a liquid-tight tank sump and sump sensor at all interconnected tanks. The piping system shall comply with this section.

Env-Wm 1401.25 Spill Containment and Overfill Protection.

(a) All underground storage tanks shall be equipped with spill containment and overfill protection devices.

(b) Spill containment equipment shall prevent the release of product to the environment when a transfer hose is detached from a fill or transfer pipe.

(c) All spill containment equipment installed on an existing or new underground storage tank system shall have a minimum liquid capacity of 5 gallons.

(d) The overfill protection equipment:

(1) Shall alert the transfer operator when the tank is no more than 90% full by restricting the flow into the tank or by triggering high level audible alarm; or

(2) When gravity filling a tank, shall alert the transfer operator 30 minutes prior to overfilling by restricting flow to an ultimate rate of 5 gallons per minute; or

(3) Shall automatically shut off flow into the tank when the tank is no more than 95% full.

(e) All gauges, alarms, or automatic or mechanical devices associated with spill containment and overfill protection shall be maintained in good working order to perform their original design function.

Env-Wm 1401.26 Leak Monitoring for New Tanks.

(a) Leak monitoring shall be installed and continuously operated for all new tanks.

(b) Double-wall tanks shall have continuous monitoring of the interstitial space for both the regulated substance and water.

(c) Single wall tanks shall have continuous monitoring of the annular space between the tank and the secondary containment structure for both the regulated substance and water.

Env-Wm 1401.27 Leak Monitoring for New Underground Piping Systems.

(a) New underground piping systems shall be equipped with leak monitoring.

(b) A UL-listed line leak detector shall be employed which shall be capable of detecting a line leakage rate of 3 gallons per hour at 10 pounds per square inch, and shall shut-off or restrict product flow if the leakage rate is exceeded.

(c) The owner shall test each automatic line leak detector annually to confirm that it is operating according to manufacturer's recommendations.

(d) The interstitial space of the double wall piping or the annular space between the primary piping and the secondary containment system shall be continuously monitored to detect the presence of both water and the regulated substance, or water and vapors of the regulated substance.

(e) The piping collection sump and the submersible pump head containment sump shall

each have a leak monitor to detect the presence of both water and the regulated substance or water and vapors of the regulated substance.

Env-Wm 1401.28 Installation of New Underground Storage Systems.

(a) Any person installing a tank or individual system components shall be certified by the IFCI, within 6 months of the effective date of these rules and certified as a qualified installer by the manufacturer and have an understanding of the national underground storage tank regulations and industry codes. Installation items not included in the manufacturer's requirements shall be performed according to PEI RP 100-94, API 1615, and API 1632. The person shall also comply with safety and testing requirements according to NFPA 30 and NFPA 329.

(b) The person installing the new primary underground product piping shall perform a piping pressure test to determine tightness.

(c) The person installing the piping shall perform the piping pressure test in accordance with one of the following:

(1) The test requirements specified in NFPA 30; or

(2) The piping manufacturer's requirements.

(d) The piping installer shall certify the results of (c), above and file these results with the division and the owner at the time of backfill inspection of the system.

(e) The person installing the new secondary underground containment piping shall perform a piping pressure test to determine tightness.

(f) The person installing the new secondary underground containment piping shall perform the piping pressure test in accordance with the manufacturer's requirements.

(g) When no manufacturer's test requirements are specified, the person installing the new secondary underground containment piping shall:

(1) Pressurize the flexible secondary containment piping at 5 psi for a duration of 10 minutes; or

(2) Pressurize the nonflexible secondary containment piping at 10 psi for a duration of 10 minutes; and

(3) Use test gauges in conjunction with soaping all joints and connections for the duration of the test.

(h) The piping installer shall certify the results of (c) or (g), above and file these results with the division and the owner at the time of backfill inspection of the system.

(i) For steel tanks, the tank coating shall be thoroughly inspected, and any scratches,

gouges, voids, or other discontinuities found in the coating shall be repaired according to the manufacturer's requirements prior to installation.

(j) Whenever an existing tank is removed prior to the installation of a new tank, all applicable requirements of Env-Wm 1401.18 shall be met.

(k) Whenever an existing tank is removed prior to the installation of a new tank, all system piping that does not meet the standards for new underground storage systems as specified in Env-Wm 1401.22 shall be removed.

(l) Whenever existing piping is replaced or extended the entire piping system shall meet the requirements of Env-Wm 1401.24.

(m) Systems shall not be installed in areas subject to flooding over the top of the tank unless provisions are made to ensure that the tank shall not float and its contents shall not escape during a flood. For areas where the ground surface is below the 100 year flood elevation, special provisions for tank anchoring and product containment shall be provided to the division with the plan required pursuant to Env-Wm 1401.20.

(n) All new underground piping shall be laid out so as to minimize crossovers and, within construction limits, shall run in a compact trench to the point of use.

(o) Piping shall slope continuously towards the tank at a minimum of 1/8 inch per foot.

(p) The owner shall notify the division of the completion of the installation of a new or substantially modified system at least 5 days prior to backfilling the tank top and/or piping, to arrange for an inspection.

(q) Prior to final inspection by the division, the owner shall submit to the division a letter prepared and stamped by the design engineer or engineer of record stating that the construction has been performed in accordance with the division's approved plans and specifications.

(r) The division shall inspect the system prior to backfilling. The owner shall correct any discrepancies discovered by the division between the completed installation and approved plans within 30 days of the initial inspection and shall notify the division to arrange a follow-up inspection.

(s) The new system shall not be backfilled or placed into service until inspection has been performed by the division.

(t) At all new underground storage tank sites, the system shall be located no closer than the following:

- (1) At least 400 feet from a large community or non-transient, non-community water supply system well; or
- (2) At least 200 feet from a small community or non-transient, non-community water supply system well; or

(3) At least 75 feet from a private water supply well.

(u) Whenever an underground storage tank system is replaced, an attempt shall be made to relocate the system such that any applicable water supply well protective separation distance as specified in (t) above is achieved.

(v) With the exception of marinas, no underground storage tank system at any new site shall be located closer than 75 feet from surface waters of the state.

Env-Wm 1401.29 Release Detection for Tanks Without Secondary Containment and Leak Monitoring.

(a) With the exception of on-premise-use heating oil tanks that are otherwise subject to these rules, underground storage tanks without secondary containment and leak monitoring shall be equipped with release detection and be monitored for releases.

(b) Owners of underground storage tanks without secondary containment and leak monitoring shall conduct annual tightness testing, automatic tank gauging, groundwater monitoring, or soil gas vapor monitoring for release detection. Prior to initiating release detection, the owner shall submit in writing to the division the release detection method chosen which demonstrates that the chosen release detection method meets the requirements of this section.

(c) Owners of system(s) with no release detection shall perform a full system tightness test, pursuant to Env-Wm 1401.13, and an assessment to determine if any contamination is present by obtaining soil and groundwater samples in the immediate vicinity of the system(s). The owner shall submit to the division results of the tightness test and assessment within 15 days of the completed work.

(d) When tightness testing is used for release detection, the tanks shall be tested at least annually in accordance with Env-Wm 1401.13. Tightness testing shall not be used as a release detection method after December 22, 1998.

(e) When automatic tank gauging is used for release detection, the gauge shall provide at least one passing test in a 30 day period for tank leakage with a detection limit of at least 0.2 gallons per hour. In-tank monitoring shall operate in a leak detection mode for at least 2 hours during each 24 hour period.

(f) An automatic tank gauging leak or failure shall be indicated by a test result of greater than 0.2 gallons per hour.

(g) The owner of an underground storage system shall report any automatic tank gauging failure to the division immediately.

(h) An automatic tank gauging failure shall be addressed as follows:

(1) The owner shall perform an investigation into the cause of the failure to determine if a release has occurred; and

(2) If a possible release of regulated substance from the system has occurred, the owner shall comply with all requirements of Env-Ws 412.

(i) Prior to installing groundwater or soil gas vapor monitoring wells for release detection, the owner shall submit plans to the division which demonstrate that the monitoring well installation complies with Env-Wm 1401.29 (j) and (p), below.

(j) Owners of underground storage tanks without secondary containment and leak monitoring may use groundwater monitoring wells as a release detection method as long as the following conditions are met:

(1) The stored regulated substance is immiscible in water and have a specific gravity of less than one;

(2) The groundwater table is within 20 feet of the ground surface;

(3) The monitoring wells are installed to intercept the tank excavation zone;

(4) When the requirements of (3), above cannot be met, the monitoring wells are placed as close to the tank(s) as technically feasible and the well screen of the monitoring well shall completely intercept seasonal fluctuations in the water table;

(5) The hydraulic conductivity of the soil surrounding a monitoring well and between a monitoring well and the tank is greater than 0.01 centimeters per second;

(6) The slotted portion of the monitoring well casing is designed to prevent migration of natural soils or filter pack into the well but to allow entry of regulated substance on the water table into the well under both high and low grade-water conditions;

(7) Monitoring wells are sealed from the ground surface to the top of the filter pack; and

(8) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

(k) The owner shall monitor the groundwater monitoring wells for the presence of releases at least monthly.

(l) The owner performing the monitoring shall monitor the wells in accordance with one of the following:

(1) By the use of a continuous monitoring device that shall detect the presence of free-product or sheen on top of the groundwater in the monitoring wells; or

(2) By manual methods that shall be able to detect free-product or sheen on top of the groundwater in the monitoring wells.

(m) The owner shall sample each monitoring well at least annually and shall submit the collected groundwater samples to a New Hampshire-certified laboratory for analysis for the presence of regulated substance, and shall submit the test results to the division within 30 days of the test.

(n) The owner shall notify the division within 24 hours whenever a regulated substance is detected by observation, a continuous detection device, or laboratory analysis of groundwater well samples.

(o) Groundwater monitoring wells shall not be used as a release detection method at facilities where releases have previously occurred or groundwater is contaminated with a regulated substance.

(p) Owners of underground storage tanks without secondary containment and leak monitoring may use soil gas vapor monitoring wells as a release detection method as long as the following conditions are met:

- (1) The device or method for monitoring provides at least one monthly test for the presence of the regulated substance stored in the tank;
- (2) The stored liquid or approved tracer additive is sufficiently volatile to provide a vapor level that is detectable by the monitoring device used;
- (3) The measurement of vapors by the monitoring device is not rendered inoperative by the groundwater, rainfall, or soil moisture or other known interferences such that a release could go undetected for more than 30 days;
- (4) The monitoring device is installed to intercept the tank excavation zone, or shall be placed as close to the tank as possible;
- (5) The subsurface materials and conditions surrounding the monitoring device and between the device and tank, is sufficiently porous in their in-situ condition to readily allow diffusion of vapors from the tank to the device;
- (6) The vapor monitor is designed and operated to detect any increase in concentration above background concentrations;
- (7) The owner shall notify the division within 24 hours whenever vapor monitoring devices detect any increase in concentration above background concentrations; and
- (8) Monitoring wells installed for soil gas vapor monitoring shall meet the same requirements as wells installed for groundwater monitoring, except the screened interval need not intercept groundwater.

Env-Wm 1401.30 Release Detection for Piping.

(a) With the exception of on-premise-use heating oil systems that are otherwise subject to these rules, all pressurized piping without secondary containment and leak monitoring shall be

monitored for releases in accordance with (c), below. Prior to initiating release detection, owners shall submit in writing the release detection method to the division which demonstrates that the chosen release detection method meets the requirements of this section.

(b) All pressurized piping shall be equipped with an automatic line leak detector which shall restrict or stop the flow of the stored substance and trigger an audible or visual alarm upon detecting a leak at a rate of 3 gallons per hour at a pressure of 10 pounds per square inch line pressure within one hour. Automatic line leak detectors shall be tested annually to confirm that they are operating according to manufacturer's recommendations. The test results shall be submitted by the owner to the division no later than 30 days after the date of the test.

(c) Release detection for systems with pressurized piping shall use one of the following:

- (1) Groundwater monitoring in accordance with Env-Wm 1401.29(j);
- (2) Soil vapor monitoring in accordance with Env-Wm 1401.29(p); or
- (3) Annual line tightness testing in accordance with (e), below.

(d) When annual line tightness testing is used, the owner shall submit test results to the division. Pipe pressure tightness tests shall have a detection limit equivalent to 0.1 gallon per hour at 1.5 times operating pressure.

(e) Release detection for systems with suction or atmospheric piping shall be one of the following:

- (1) Performance of a line tightness test in accordance with (f), below once every 3 years;
- (2) Groundwater monitoring in accordance with Env-Wm 1401.29(j); or
- (3) Soil vapor monitoring in accordance with Env-Wm 1401.29(p).

(f) When line tightness testing is used for suction or atmospheric piping, the owner shall submit test results to the division. Pipe pressure tightness test shall have a detection limit equivalent to 0.1 gallon per hour at 1.5 times operating pressure.

(g) Release detection shall not be required for suction or atmospheric piping that is demonstrated, by division inspection or by plans submitted by the owner, to be designed and constructed to meet the following standards:

- (1) The below grade piping operates at less than atmospheric pressure;
- (2) The below grade piping is continuously sloped so that the contents of the piping will drain back into the storage tank if the suction is released;
- (3) No more than one check valve is included in each suction line; and

(4) The check valve is located directly below and as close as practical to the suction pump.

(h) A tightness test failure shall be addressed as follows:

(1) The owner shall perform an investigation into the cause of the failure to determine if a release has occurred;

(2) The investigation into the cause of an initial test failure shall be completed within 7 days and include the performance of a second confirming pipe tightness test;

(3) The owner shall submit a written report to the division within 30 days of the failure which describes the work performed, the repairs made, and any other actions taken in response to the test failure; and

(4) Any piping system which has been repaired shall be retested for tightness to confirm the effectiveness of the repairs.

(i) When the cause of the failure is unknown or there is a possible release to the environment, the owner shall notify the division within 24 hours of the occurrence in accordance with Env-Ws 412.02.

Env-Wm 1401.31 Operation of Leak Monitoring Equipment.

(a) Leak monitoring equipment and devices shall be maintained in good working order at all times to continuously perform their original design function and shall be tested annually for proper operation in accordance with the manufacturer's requirements.

(b) Leak monitoring devices shall not be turned off or deactivated at any time without prior notification by the owner to the division. Any malfunction shall be repaired within 15 working days. If the device(s) cannot be repaired within 15 days, the affected system(s) shall be temporarily closed until satisfactory repairs are made. Any deactivation of a monitor shall be immediately reported to the division by the owner.

(c) Leak monitors shall employ an audible alarm and visual indicator, and shall be so located as to be readily heard and seen by the operator or other personnel during normal working hours.

(d) All monitoring devices shall be conspicuously marked or labeled as being monitoring devices and shall be secured against vandalism and incidental damage.

Env-Wm 1401.32 Corrosion Protection for Steel Tanks.

(a) All new underground storage tanks shall be protected from corrosion. Corrosion protection for new tanks shall comply with 40 CFR 280.20(a).

(b) All existing steel underground storage tanks shall be protected from corrosion no later than December 22, 1998. Corrosion protection for existing steel tanks shall comply with 40 CFR

280.21(b)(2) or (3).

(c) All new and existing cathodic protection systems shall be equipped with an accessible test connection or monitor. Sacrificial anode systems shall be tested within 6 months of installation and every 3 years thereafter by a qualified cathodic protection tester.

(d) Impressed current systems shall be tested within 6 months of installation and every 3 years thereafter by a qualified cathodic protection tester.

(e) When a cathodic protection test is conducted, the information required for reporting the results of the cathodic protection test shall include the following:

- (1) Location and name of the facility;
- (2) Facility identification number;
- (3) Date of the test;
- (4) Testing company name;
- (5) Equipment used to conduct the test;
- (6) Test locations; and
- (7) Test results.

(f) The qualified cathodic protection tester who has conducted the test shall agree to and sign the following: "I hereby certify that I am a qualified cathodic protection tester who has an understanding of the principles and measurements of all common types of techniques used to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell as applied to buried piping and tank systems."

(g) When a cathodic protection test is performed, the owner shall send the information specified in (e) and (f), above to the division no later than 30 days after the date of the test.

(h) The information required in (e) and (f), above shall be submitted on a form obtained from the division.

(i) A tank shall be considered cathodically protected when one of the following requirements is met:

- (1) A negative cathodic potential of at least 850 mV with the cathodic protection applied, which shall be measured with respect to a saturated copper/copper sulfate reference electrode contacting the electrolyte. Voltage drops other than those across the structure/electrolyte boundary is considered valid interpretation of this voltage measurement; or

(2) A minimum of 100 mV of cathodic polarization. The formation or decay of polarization can be used to satisfy this criterion; or

(3) The requirements specified in NACE International approved criteria (NACE) Standard RP-0285-95.

(j) When a cathodic protection system cannot meet the requirements of (i), above, a corrosion expert shall repair the cathodic protection system or the underground storage tank system shall be permanently closed.

Env-Wm 1401.33 Corrosion Protection for Piping.

(a) All new metal piping used as secondary containment for piping that routinely contains regulated substances and is in contact with the soil or other backfill material shall be protected from corrosion. Corrosion protection for new piping shall comply with 40 CFR 280.20(b).

(b) All existing metal piping that routinely contains regulated substances and is in contact with the soil or other backfill material shall be protected from corrosion no later than December 22, 1998. Corrosion protection for existing metal piping shall comply with 40 CFR 280.21(c).

Env-Wm 1401.34 Submission of Corrosion Protection Plan. At least 90 days prior to installing corrosion protection for an unprotected underground storage system, the owner of underground storage system shall submit a corrosion protection plan for approval to the division. The plan shall be prepared by a corrosion protection expert in accordance with Env-Wm 1401.20(b),(c), and (d).

Env-Wm 1401.35 Installation of New and Replacement Fueling Systems over Surface Waters.

(a) Underground storage tank systems at fueling facilities dispensing fuels over water shall meet the requirements of these rules and NFPA 30 and NFPA 30A.

(b) Piping systems where tanks are at an elevation that produces a pressure due to gravity at the dispenser shall be equipped with an anti-siphon device installed adjacent to and downstream from a manually operated shutoff valve. The anti-siphon device and manual shutoff valve shall be located inside a liquid-tight collection sump at the tank.

(c) Piping systems shall have continuous secondary containment or be equipped with liquid-tight collection sumps at locations where secondary containment is not possible.

(d) Piping systems with liquid-tight collection sumps shall have a sump sensor.

(e) Piping systems shall be equipped with flexible secondarily contained piping between any floating structure and the shore.

(f) Piping systems shall be equipped with the readily accessible shutoff valve located on the shore, and as close to the shoreline as possible. The valve shall be installed adjacent to and upstream from the location employing flexible piping from a floating structure and the shore.

- (g) Piping systems shall be protected from physical damage.
- (h) Dispensing nozzles shall be automatic closing type without a device which allows the dispensing nozzle to remain open.
- (i) Piping shall not be installed in surface water.

Env-Wm 1401.36 Lining Steel Tanks.

- (a) A steel underground storage tank which is leaking shall not be lined to be repaired.
- (b) A steel underground storage tank may have an interior liner installed no more than once during the life of the tank, subject to the following conditions:
 - (1) The tank has passed a tightness test conducted in accordance with Env-Wm 1401.13 within 30 days prior to submittal of the application and plans for the installation of the liner;
 - (2) Inventory records have been maintained for the preceding 3 years and do not show a loss of liquid, or an assessment is performed which indicates that no soil or groundwater contamination is present; and
 - (3) The liner material is compatible with the regulated substance stored.
- (c) Steel tank lining shall be accomplished in accordance with American Petroleum Institute Publication 1631, "Recommended Practices for the Interior Lining of Existing Steel Underground Storage Tanks" and NLPA 631 "Standards for Relining Tanks."
- (d) The owner shall submit plans and specifications for approval for the lining installation to the division in accordance with Env-Wm 1401.20.
- (e) The system shall be tightness tested in accordance with Env-Wm 1401.13 within 30 days after lining of the tank is completed.
- (f) The lining shall be tested 10 years from the date of installation, then every 5 years thereafter for structural soundness, voids, detachment from the metal tank, and other defects. If at any time the lining is determined not to be functioning as originally intended and installed, the tank shall be permanently closed.

Env-Wm 1401.37 Repair of Glass-Fiber-Reinforced Plastic Tanks.

- (a) An underground glass-fiber-reinforced plastic tank shall be subject to the following conditions:
 - (1) The tank has passed a precision tightness test conducted in accordance with Env-Wm 1401.13; is in compliance with release detection or leak monitoring requirements; and inventory records for the preceding 3 years indicate no loss of stored

liquid, or an assessment is performed which indicates that no soil or groundwater contamination is present; and.

(b) Repairs shall be conducted in accordance with Fiberglass Tank and Pipe Institute Standards T-95-02.

(c) Following completion of the repair of the tank but before backfilling, the system shall be tightness tested in accordance with Env-Wm 1401.13.

Env-Wm 1401.38 Repair and Replacement of Piping Systems.

(a) Piping systems which discharge, leak, spill, or release a regulated substance to the environment shall be replaced by systems meeting the requirements of Env-Wm 1401.22.

(b) When a tank is removed and replaced, all piping shall also be replaced, unless it meets the requirements of these rules for new piping.

Env-Wm 1401.39 Field-Fabricated Tanks.

(a) Field-fabricated underground storage tanks shall not be used unless the complete system is designed by a professional engineer licensed under RSA 310-A and manufactured and installed in accordance with standards of Underwriters Laboratories, Inc., UL 1316, or UL 58.

(b) New field-fabricated tanks shall meet all requirements of these rules for new installations.

(c) The owner shall submit plans and specifications for the field fabrication to the division for approval in accordance with Env-Wm 1401.20.

(d) The registered structural engineer shall certify that:

(1) A field-fabricated tank is necessary because installation of a factory fabricated tank is not feasible; and

(2) The design plans and specifications meet all applicable requirements of these rules.

Env-Wm 1401.40 Secondary Containment for Hazardous Substance Systems.

(a) All hazardous substance underground storage systems without secondary containment and leak monitoring shall be closed by December 22, 1998.

(b) New secondary containment system installations shall meet all requirements of these rules for new installations.

(c) The owner shall submit plans and specifications for the secondary containment system installation to the division in accordance with Env-Wm 1401.20.

Env-Wm 1401.41 Waivers

- (a) An owner may request a waiver of specific rules in this part in accordance with (b), below.
- (b) All requests for waivers shall be submitted in writing to the division on a form obtained from the division;
- (c) The form shall include the following information:
 - (1) A description of the facility to which the waiver request relates, including the name, address, and registration number of the facility;
 - (2) A specific reference to the section of the rule for which a waiver is being sought;
 - (3) A full explanation of why a waiver is necessary;
 - (4) A full explanation of the alternatives for which a waiver is sought, with backup calculations and data for support; and
 - (5) A full explanation of how the grant of the waiver is consistent with the intent of RSA 146-C.
- (d) The division shall grant a waiver upon finding that:
 - (1) The alternatives proposed are at least equivalent to the specific requirements contained in the rule; or
 - (2) If the alternatives proposed are not equivalent to the requirements contained in the rule, they are adequate to ensure that the intent of RSA 146-C and these rules is met.
- (e) The division shall issue a written response to a request for a waiver within 60 days of receipt of the request.

Env-Wm 1401.42 Owner Responsibility. The owner may delegate responsibilities imposed by Env-Wm 1401 to a person responsible for the day-to-day operation of the facility. Delegation shall not relieve the owner from liability for non-compliance with these requirements.

Env-Wm 1401.43 Reference Standards.

- (a) Referenced standards shall be available for inspection at the Department of Environmental Services, Waste Management Division, 6 Hazen Drive, Concord, New Hampshire 03301 and might be available from the following sources:
 - (1) American National Standards Institute (ANSI), 11 West 42nd Street, New

York, N.Y. 10036, (212) 642-4900.

(2) American Petroleum Institute (API), 1220 L Street, N.W., Washington, D.C. 20005, (202) 682-8375.

(3) American Society for Testing and Materials (ASTM), 100 Bar Harbor Drive, West Conshohocken, PA 19428-2959, (610) 832-9585.

(4) NACE, P.O. Box 218340, Houston, Texas 77218, (713) 492-0535.

(5) National Fire Protection Association (NFPA), Batterymarch Park, Quincy, Massachusetts 02269, (800) 344-3555.

(6) National Leak Prevention Association (NLPA), PO Box 1643, Boise, Idaho 83701-1643.

(7) Underwriters Laboratories (UL), 333 Pfingsten Road, Northbrook, Illinois 60062, (708) 272-8800.

(8) Petroleum Equipment Institute (PEI), P.O. Box 2380, Tulsa, Oklahoma 74101, (918) 494-9696.

(9) Steel Tank Institute (STI), 570 Oakwood Road, Lake Zurich, IL 60047, (798) 438-8265.

(b) Where citations are used in this part, the owner shall refer to the publications listed below:

(1) From the American National Standards Institute, the following:

a. Standard Number B31.3 "Chemical Plant and Petroleum Refinery Piping."

b. Standard Number B31.4 "Liquid Transportation Systems for Hydrocarbons, Liquid Petroleum Gas, Anhydrous Ammonia, and Alcohols."

(2) From the American Petroleum Institute, the following:

a. Standard Number 1604 - "Recommended Practice for Abandonment or Removal of used Underground Storage Station Tanks;"

b. Standard Number 1613 - "Product Removal and Ventilation Procedures;"

c. Standard Number 1615 - "Installation of Underground Storage Tanks and Piping at Service Stations."

d. Standard Number 2015 - "Safe Entry and Cleaning of Petroleum Storage Tanks."

(3) From the American Society of Testing and Materials, the following:

a. Standard Number ES 40- "Emergency Standard Practices for "Procedures for the Assessment of Buried Steel Tanks prior to the Addition of Cathodic Protection."

(4) From the NACE, the following:

a. Standard Number RP-0169-92 "Control of External Corrosion on Underground or Submerged Metallic Piping Systems;"

b. Standard Number RP-0285-95, "Corrosion Control of Underground Storage Tank Systems by Cathodic Protection."

(5) From the National Fire Protection Association, the following:

a. Standard Number 30, "Flammable and Combustible Liquids Code;"

b. Standard Number 30A, "Automotive and Marine Service Station Code;"

c. Standard Number 329, "Handling Underground Releases of Flammable & Combustible Liquids;"

d. Standard Number 70 "National Electric Code."

(6) From the National Leak Prevention Association, the following:

a. Standard Number 631 "Entry, Cleaning, Interior Inspection and Repair, and Lining of Underground Storage Tanks.

(7) From Underwriters Laboratories, the following:

a. Subject 971, "Standard for Nonmetallic Underground Piping for Flammable Liquids;"

b. Standard UL 58 "Steel Underground Tanks for Flammable and Combustible Liquids;"

c. Standard UL 87 "Power Operated Dispensing Devices for Petroleum Products;"

d. Standard UL 1316 "Glass Fiber Reinforced Plastic Underground Storage Tanks for Petroleum Products;"

e. Standard Number UL 1746 "External Corrosion Protection Systems for Steel Underground Storage Tanks."

(8) From Petroleum Equipment Institute, the following:

a. Recommended Practice 100-94 - "Recommended Practices for Installation of Underground Liquid Storage Systems."

(9) From the Steel Tank Institute, the following:

a. Standard Number ACT 100 "Specification for the Fabrication of FRP CLAD/Composite Underground Storage Tanks."

(c) Where there is any conflict between these rules and any of the referenced standards, the most stringent shall apply.

Env-Wm 1401.44 Facility Owner Responsibility Per Statute.

(a) The owner of an underground storage facility shall comply with all requirements of Env-Wm 1401 and with the following statutes:

(1) An owner shall prohibit the discharge of regulated substance from any facility into or onto any land, groundwater, or surface water of the state in accordance with RSA 146-C:2;

(2) The owner of an underground storage facility shall register the facility with the division in accordance with RSA 146-C:3;

(3) The owner of an underground storage facility shall apply to the division for a permit to operate in accordance with RSA 146-C:4;

(4) The owner of an underground storage facility shall upon the request of any employee or authorized representative of the division furnish information related to the facility and permit such employees or authorized representative to have access to the facility in accordance with RSA 146-C:5;

(5) At least 90 days prior to commencing construction or installation of a new or replacement underground storage system or a substantial modification of an underground storage system, the owner shall submit plans and specifications as required by RSA 146-C:7, I with the fee required by RSA 146-C:7, I-a to the division; and

(6) Underground storage tanks which have been removed that do not meet the standards for new tanks shall not be reused as underground storage tanks for regulated substances in accordance with RSA 146-C:8.